REMARKS

Claims 78 – 95 are pending. Claims 60 - 77 have been canceled and new claims 78 - 95 have been added. No new matter has been introduced. Reexamination and reconsideration of this application is respectfully requested.

In the July 12, 2005 Office Action, the Examiner stated that claims 60 – 77 are directed to an invention that was not previously elected and thus had been withdrawn from consideration as being directed to a non-elected invention. Accordingly, the applicants have cancelled claims 60 – 77.

The applicants also appreciate Examiner Siddiqi's willingness to discuss the case in the early October phone interview.

Applicant have added claims 78 – 95. These claims are directed to the subject matter of the elected claims, i.e., previously pending claims 19 – 59, drawn to computer networking. Applicants respectfully submit that the claims distinguish over the references previously cited by the Examiner, i.e., U.S. Patent No. 6,345,294 to O'Toole ("the O'Toole reference") and U.S. Patent No. 5,968,126 to Hubacher ("the Hubacher reference").

Claim 78 distinguishes over the O'Toole / Hubacher combination. Claim 78 recites:

> A system, comprising:
> a client device, the client transmitting a request for an operating system utilizing the BOOTP protocol;
> **a pre-boot execution environment (PXE) agent device, the PXE agent device located on a first local area network with the client device, to receive the BOOTP request for the operating system, to open a hypertext transport protocol (HTTP) session, to convert the BOOTP request for the operating system to a HTTP request for the operating system; and to transmit the HTTP request for the operating system; and**

a pre-boot execution environment (PXE) server, the PXE server being located on a second local area network separated by at least one router from the first local area network, to receive the converted HTTP request for the operating system, to retrieve the operating system requested in the converted HTTP request, and to transmit the retrieved operating system via HTTP, wherein the PXE agent device receives the retrieved operating system via HTTP, converts the HTTP protocol to the BOOTP protocol, and transmits the retrieved operating system to the client device utilizing the BOOTP protocol.

The O'Toole reference does not disclose, teach, or suggest the system of claim 78. The Examiner states that the O'Toole reference discloses the forwarding by a management agent to a management server a request for service via Hypertext Transfer Protocol (HTTP) and that the management server sends service information via HTTP to the management agent. *(Office Action, page 3)*. Specifically, the O'Toole reference discloses that an appliance, upon being powered up, may make use of the BOOTP and DHCP requests to obtain a source of network parameters. The boot server or DHCP server is a computer that acts as a server in the local networking environment and responds to certain types of route requests messages. *(O'Toole, col. 7, lines 40 - 46)*. The appliance, once it is connected to a LAN, can run a boot algorithm to configure itself. The goal of the boot algorithm is to learn enough about the IP environment in which the appliance is installed to obtain a connection with the appliance registry in order to download additional configuration information. *(O'Toole, col. 6, lines 39 - 44)*. Because it is sometimes difficult to communicate with the appliance registry over the wide area network, the remote booting system for the appliance may be implemented in a way to allow the boot status messages to get to the appliance registry. For example, they can be carried via email, by domain name service look-up request, by IP packets, or over HTTP requests. *(O'Toole, col. 6, lines 27 - 40)*.

One possible example is to send a single IP packet through the network directory to the server. Another possibility is for the appliance to encode the message into a URL and send it as a HTTP request either directly to the registry or via a proxy server, where the proxy server can handle such messages and forward them to the appliance registry. *(O'Toole, col. 10, lines 55 - 62).*

This is not the same as a system including a client device, a PXE agent device, and a PXE server **including the PXE agent device being located on a first local area network with the client device, to receive the BOOTP request for the operating system, to open a hypertext transport protocol (HTTP) session, to convert the BOOTP request for the operating system to a HTTP request for the operating system; and to transmit the HTTP request for the operating system**. The O'Toole reference discloses that the appliance itself can encode a message into a URL and send it as a HTTP request. Alternatively, the O'Toole reference discloses that the appliance can send a message using the BOOTP protocol. However, there is no disclosure that **the client sends a BOOTP request for the operating system and that a PXE agent device receives the BOOTP request and coverts the BOOTP request into an HTTP request for the operating system and then transmits the HTTP request to the PXE server**, as is recited in claim 78. In contrast, the O'Toole reference discloses that an HTTP message is sent out from the client or that an HTTP message is sent from the client to a proxy server. There is no disclosure of any conversion from BOOTP protocol to a HTTP protocol at the client or at the proxy server. Further, the O'Toole reference does not disclose that the request is for **an operating system**. The O'Toole reference discloses that a request for additional configuration

parameters is made but there is no positive recitation that an operating system is requested. Accordingly, applicants respectfully submit that claim 78 distinguishes over the O'Toole reference.

Claim 78 further distinguishes over the O'Toole reference. The O'Toole reference does not disclose a system including a client, a PXE agent, and a PXE server, **the PXE server being located on a second local area network separated by at least one router from the first local area network, to receive the converted HTTP request for the operating system, to retrieve the operation system requested in the converted HTTP request, and to transmit the retrieved operating system via HTTP, wherein the PXE agent device receives the retrieved operating system via HTTP, converts the HTTP protocol to the BOOTP protocol, and transmits the retrieved operating system to the client device utilizing the BOOTP protocol.** The Examiner states that the O'Toole reference is silent as to disclosing a PXE server and the applicants agree. Accordingly, applicants respectfully submit that claim 78 further distinguishes over the O'Toole reference. Assuming, *arguendo*, that the O'Toole reference discloses that there is a PXE server, the O'Toole reference does not disclose that an operating system is retrieved at the PXE server and transmitted back through the PXE agent device via HTTP, converted to the BOOTP protocol, and then sent to the client via BOOTP protocol, as is recited in claim 78. The O'Toole reference discloses only that an appliance runs on a Linux operating system and can obtain configuration information from 1) a boot server; 2) a DHCP server; or 3) an appliance registry. Accordingly, claim 78 further distinguishes over the O'Toole reference.

The Hubacher reference does not disclose, teach, or suggest the system of claim 78. The Examiner utilizes the Hubacher reference to disclose that a management server comprises a pre-execution boot environment. The Examiner also utilizes the Hubacher reference to disclose that the service information includes bootstrap instructions. *(Office Action, pages 8 and 9)*. The Hubacher reference discloses the utilization of a remote initial program load (RIPL) which is a process of loading an operating system from a remote location. This process requires that each network computer have a remote boot ROM, which could be either a RIPL chip or a PXE chip. In addition, no user interaction is possible. The Hubacher reference is directed to a pre-execution logon (PEL) which provides an apparatus and method to allow a server in a LAN environment to validate a user's ID and password prior to booting a client system. During startup of the client system, PEL presents a logon screen to the user and sends this logon information to the server. The server will validate the information and allow a boot on the client or may not allow the boot. In the RIPL/PXE environment, the PEL can provide a specific system personality to the user. PEL provides a security feature that prevents booting by unauthorized users, prior to loading of the operating system. *(Hubacher, col. 1, line 45 - col. 2, line 12 and col. 2, lines 49 - 61)*.

This is not the same as a system including a client, a PXE agent device , and a PXE server, **the PXE agent device located on a first local area network with the client device, to receive the BOOTP request for the operating system, to open a hypertext transport protocol (HTTP) session, to convert the BOOTP request for the operating system to a HTTP request for the operating system; and to transmit the HTTP request for the operating system**. First, the Hubacher reference does not

disclose that a client sends a BOOTP request to a PXE agent on the same local

network. The Hubacher reference discloses only that a client can send a request to a

server. Further, the Hubacher reference does not disclose that the PXE agent device

converts the BOOTP request for an operating system into a HTTP request because the

Hubacher reference discloses only that a client (not the agent) has to have a PXE chip,

which is used in the TCP/IP environment. There is no disclosure that **a conversion**

from the BOOTP protocol to the HTTP is made, as is recited in claim 78. This is

significant because DHCP and BOOTP requests are typically filtered on switches and

routers and thus only an HTTP request would be able to be transmitted outside the first

network.

In addition, the Hubacher reference does not disclose, teach, or suggest a

system including a client, a PXE agent device, and a PXE server, **the PXE server**

being located on a second local area network separated by at least one router

from the first local area network, to receive the converted HTTP request for the

operating system, to retrieve the operation system requested in the converted

HTTP request, and to transmit the retrieved operating system via HTTP, wherein

the PXE agent device receives the retrieved operating system via HTTP, converts

the HTTP protocol to the BOOTP protocol, and transmits the retrieved operating

system to the client device utilizing the BOOTP protocol. Although the Hubacher

reference does utilize the term remote, the Hubacher reference is directed to an

apparatus and method in a LAN environment, not in an environment including two

LANS. There is no disclosure of a PXE server being located on a second LAN

separated from a first LAN. The Hubacher reference also does not disclose that **the**

PXE server transmits the retrieved operating system via HTTP. In addition, there is

no disclosure that **the PXE agent device receives the retrieved operating system**

via HTTP, converts the HTTP protocol to the BOOTP protocol and transmits the

retrieved operating system to the client device utilizing the BOOTP protocol.

Further, there is no discussion of an PXE agent being utilized because in the Hubacher

reference the client directly communicates with the server. Accordingly, applicants

respectfully submit that claim 78 distinguishes over the O'Toole / Hubacher

combination.

Independent claim 89 recites similar limitations to independent claim 78.

Accordingly, applicants respectfully submit that claim 89 distinguishes over the O'Toole

/ Hubacher reference for reasons similar to those discussed above in regard to claim

78.

Claims 79 – 81 and 90 – 91 depend directly on claims 78 and 89, respectively.

Accordingly, applicants respectfully submit that claims 79 – 81 and 90 - 91 distinguish

over the O'Toole / Hubacher combination for the same reasons as those discussed

above with regard to claim 78.

Independent claim 82 distinguishes over the cited references. Independent

claim 82 recites:

> A method for operating a management server, comprising:
> receiving a pre-boot request from a PXE client, the PXE client
> requesting booting information;
> querying a management database for booting information for the
> PXE client;
> receiving the booting information from the management database if
> the management database has the booting information for the PXE client,
> the booting information including instructions to install a specific operating
> system if the management database has booting information for the PXE
> client;

transmitting both the instructions to install a specific
operating system and the operating system to the PXE client if the
management database has booting information for the PXE client;
and

transmitting a command for the PXE client to boot locally if the
management database does not have booting information for the
PXE client and default information in the management server for the
PXE client indicates the PXE client should boot locally.

The O'Toole reference does not disclose, teach, or suggest the method for

operating a management server of claim 82. The O'Toole reference discloses that a

client can contact a boot server, an appliance registry, or an appliance database.

However, the O'Toole reference does not disclose that either the appliance registry or

the appliance database operate in the same fashion as the management server of

claim 82, i.e., **transmitting both the instructions to install a specific operating**

system and the operating system to the PXE client if the management database

has booting information for the PXE client; and transmitting a command for the

PXE client to boot locally if the management database does not have booting

information for the PXE client and default information in the management server

for the PXE client indicates the PXE client should boot locally. There is no

discussion in the O'Toole reference that different instructions are sent to the PXE client

depending upon whether the management database has information about the PXE

client. Accordingly, applicants respectfully submit that claim 82 distinguishes over the

O'Toole reference.

The Hubacher reference does not make up for the deficiencies of the O'Toole

reference. The Examiner utilizes the Hubacher reference to disclose that a

management server comprises a pre-execution boot environment. The Examiner also

utilizes the Hubacher reference to disclose that the service information includes

bootstrap instructions. *(Office Action, pages 8 and 9)*. Assuming, *arguendo*, that the Hubacher reference discloses all that the Examiner states that it does, the Hubacher reference does not disclose a method of operating a management server including **transmitting both the instructions to install a specific operating system and the operating system to the PXE client if the management database has booting information for the PXE client; and transmitting a command for the PXE client to boot locally if the management database does not have booting information for the PXE client and default information in the management server for the PXE client indicates the PXE client should boot locally.** Accordingly, applicants respectfully submit that claim 82 distinguishes over the O'Toole / Hubacher combination.

Independent claim 92 recites limitations similar to claim 82. Accordingly, applicants respectfully submit that claim 92 distinguishes over the O'Toole / Hubacher combination for reasons similar to those discussed above in regard to claim 82.

Claims 83 – 85 and 93 – 95 depend, indirectly or directly on claims 82 and 92, respectively. Accordingly, applicants respectfully submit that claims 83 – 85 and 93 – 95 distinguish over the O'Toole and Hubacher combination for the same reasons as discussed above in regard to claim 82.

Independent claim 86 distinguishes over the cited references. Independent claim 86 recites:

> A method for enabling a PXE client, comprising:
> transmitting a request to a management server for booting information; and
> receiving a command from the management server, the command providing the PXE client with the booting information, **wherein the PXE client is capable of**

loading, in response to the booting information, an operating system software specified by a management database if the management database includes specific booting information for the PXE client;

booting, in response to the booting information, the PXE client from an operating system on a local medium if the management database does not include booting information for the PXE client; and

booting, in response to the booting information, the PXE client from an operating system on a network the PXE client is connected to if the management database does not include booting information for the PXE client and the management server does not include default information for the PXE client.

The O'Toole reference does not disclose, teach, or suggest the method of claim 86. The Examiner states that the O'Toole reference discloses the forwarding by a management agent to a management server a request for service via Hypertext Transfer Protocol (HTTP) and that the management server sends service information via HTTP to the management agent. *(Office Action, page 3)*. Specifically, the O'Toole reference discloses that an appliance, upon being powered up, may make use of the BOOTP and DHCP requests to obtain a source of network parameters. The boot server or DHCP server is a computer that acts as a server in the local networking environment and responds to certain types of route requests messages. *(O'Toole, col. 7, lines 40 - 46)*. The appliance, once it is connected to a LAN, can run a boot algorithm to configure itself. The goal of the boot algorithm is to learn enough about the IP environment in which the appliance is installed to obtain a connection with the appliance registry in order to download additional configuration information. *(O'Toole, col. 6, lines 39 - 44)*. Because it is sometimes difficult to communicate with the appliance registry over the wide area network, the remote booting system for the appliance may be implemented in a way to allow the boot status messages to get to the

appliance registry. For example, they can be carried via email, by domain name service look-up request, by IP packets, or over HTTP requests. *(O'Toole, col. 6, lines 27 - 40).* One possible example is to send a single IP packet through the network directory to the server. Another possibility is for the appliance to encode the message into a URL and send it as a HTTP request either directly to the registry or via a proxy server, where the proxy server can handle such messages and forward them to the appliance registry. *(O'Toole, col. 10, lines 55 - 62).*

This is not the same as a method of enabling a PXE client, including transmitting a request to a management server for booting information and receiving a command from the management server, the command providing the PXE client with the booting information, **wherein the PXE client is capable of loading, in response to the booting information, an operating system software specified by a management database if the management database includes specific booting information for the PXE client.** The O'Toole reference does not disclose the sending of booting instructions that instruct the PXE to load an operating system software specified by a management database. The O'Toole reference is disclosing only that the additional configuration information may be received from an appliance registry. In addition, the O'Toole reference does not disclose that **an appliance is capable of the three possibilities of loading an operating system specified by a management database, booting from a local media, or booting from an operating system on a network to which the PXE client is connected,** as is recited in claim 86. There is no disclosure of having three potential possibilities. Accordingly, applicants respectfully submit that claim 86 distinguishes over the O'Toole reference.

The Hubacher reference does not make up for the deficiencies of the O'Toole reference. The Hubacher reference is directed to a pre-execution logon (PEL) which provides an apparatus and method to allow a server in a LAN environment to validate a user's ID and password prior to booting a client system. During startup of the client system, PEL presents a logon screen to the user and sends this logon information to the server. The server will validate the information and allow a boot on the client or may not allow the boot. In the RIPL/PXE environment, the PEL can provide a specific system personality to the user. PEL provides a security feature that prevents booting by unauthorized users, prior to loading of the operating system. *(Hubacher, col. 1, line 45 - col. 2, line 12 and col. 2, lines 49 - 61)*. The Hubacher reference never discloses receiving an receiving a command from the management server, the command providing the PXE client with the booting information, **wherein the PXE client is capable of loading, in response to the booting information, an operating system software specified by a management database if the management database includes specific booting information for the PXE client.** There is no disclosure in the Hubacher reference that the booting instructions include specific instructions for loading a specific operating system for a PXE client. Further, as discussed above, there is no disclosure that the Hubacher reference client includes the capability of loading an operating system specified by a management database, booting from a local medium, or booting from an operating system on a network to which the Hubacher reference client is connected. Accordingly, applicants respectfully submit that claim 86 distinguishes over the Hubacher / O'Toole combination.

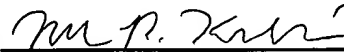Claims 87 and 88 depend directly on claim 86. Accordingly, applicants

respectfully submit that claims 87 and 88 distinguish over the O'Toole / Hubacher

combination for the same reasons as those discussed above in regard to claim 86.

Applicants believe that the claims distinguish over the references of record. If for

any reason the Examiner finds the application is other than in condition for allowance,

the Examiner is requested to call the undersigned attorney at the Los Angeles

telephone number (213) 488-7100 to discuss the steps necessary for placing the

application in condition for allowance should the Examiner believe that such a

telephone conference would advance prosecution of the application.

Respectfully submitted,

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